

AMENDMENTS TO THE CLAIMS:

1.(currently amended): A time-division bit-interleave multiplexing method comprising:

(a) a step of generating a plurality of first signals and a plurality of second signals to which specific pulse trains for frame synchronization are allocated respectively;

(b) a step of generating low speed signals of plural channels including said first and second signals and transmission signals;

(c) a step of partly converting said first and second signals in each channel into either of "1/0" alternating signals, said "1/0" alternating signals being repeated patterns of bits "10", and "0/1" alternating signals, said "0/1" alternating signals being repeated patterns of bits "01"; and

(d) a step of time-division multiplexing said low speed signals after said step (c), thereby producing high speed signals.

2.(currently amended): A time-division bit-interleave multiplexing method comprising:

(a) a step of generating a plurality of first signals and a plurality of second signals to which specific pulse trains for frame synchronization are allocated respectively;

(b) a step of generating low speed signals of plural channels including said first and second signals and transmission signals;

(c) a step of partly converting said first and second signals in either of each odd channel and each even channel into "1/0" alternating signals, said "1/0" alternating signals being repeated patterns of bits "10", while partly converting said first and second signals in the other

channels into "0/1" alternating signals, said "0/1" alternating signals being repeated patterns of bits "01"; and

(d) a step of time-division multiplexing said low speed signals after said step (c), thereby producing high speed signals.

3.(currently amended): A time-division bit-interleave multiplexing method comprising:

(a) a step of generating a plurality of first signals and a plurality of second signals to which specific pulse trains for frame synchronization are allocated respectively;

(b) a step of generating low speed signals of plural channels including said first and second signals and transmission signals;

(c) a step of partly converting said first and second signals in either of each odd channel and each even channel into all "0" signals, while partly converting said first and second signals in the other channels into all "1" signals; and

(d) a step of time-division multiplexing said low speed signals after said step (c), thereby producing high speed signals.

4.(currently amended): A time-division bit-interleave multiplexing method comprising:

(a) a step of generating a plurality of first signals and a plurality of second signals to which specific pulse trains for frame synchronization are allocated respectively;

(b) a step of generating low speed signals of plural channels including said first and second signals and transmission signals;

(c) a step of partly converting said first and second signals in either of each odd channel and each even channel into inverted signals; and

(d) a step of time-division multiplexing said low speed signals after said step (c), thereby producing high speed signals.

5.(currently amended): A time-division bit-interleave multiplexing method comprising:

(a) a step of generating a plurality of first signals and a plurality of second signals to which specific pulse trains for frame synchronization are allocated respectively;

(b) a step of generating low speed signals of plural channels including said first and second signals and transmission signals;

(c) a step of partly converting said first and second signals in each channel into random patterns; and

(d) a step of time-division multiplexing said low speed signals after said step (c), thereby producing high speed signals.

6.(currently amended): A time-division bit-interleave multiplexing method comprising:

(a) a step of generating a plurality of first signals and a plurality of second signals to which specific pulse trains for frame synchronization are allocated respectively;

(b) a step of generating low speed signals of plural channels including said first and second signals and transmission signals;

(c) a step of partly converting said first and second signals in either of each odd channel and each even channel into random patterns, while partly converting said first and second signals in the other channels into inverted random patterns obtained by inverting said random patterns; and

(d) a step of time-division multiplexing said low speed signals after said step (c), thereby producing high speed signals.

7.(currently amended): A time-division bit-interleave multiplexing method comprising:

(a) a step of generating a plurality of first signals and a plurality of second signals to which specific pulse trains for frame synchronization are allocated respectively;

(b) a step of generating low speed signals of plural channels including said first and second signals and transmission signals;

(c) a step of generating a random pattern, and then dividing one period of said random pattern by the number of said plural channels, hence obtaining plural different random patterns;

(d) a step of partly converting said first and second signals in each channel into each of said plural different random patterns; and

(e) a step of time-division multiplexing said low speed signals after said step (d), thereby producing high speed signals.

8.(currently amended): A time-division bit-interleave multiplexing method comprising:

(a) a step of generating a plurality of first signals and a plurality of second signals to which specific pulse trains for frame synchronization are allocated respectively;

(b) a step of generating low speed signals of plural channels including said first and second signals and transmission signals;

(c) a step of entirely converting said first and second signals in either of each odd channel and each even channel into inverted signals; and

(d) a step of time-division multiplexing said low speed signals after said step (c),
thereby producing high speed signals.